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09/833,005	04/12/2001	Douglas A. Hardy	GE04591	9509

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EXAMINER

SHIFERAW, ELENI A

ART UNIT	PAPER NUMBER
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2136

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,005

Applicant(s)

HARDY ET AL.

Examiner

Eleni A Shiferaw

Art Unit

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/19/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are presented for examination.
2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5, 11, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Ganesan (U.S. Patent Number: 5,557,678).

As per claim 1, Ganesan teaches method for enabling encryption and decryption of an initial version of a software product comprising the steps of:

generating a first encryption key (Ganesan Fig. 2 No. 202);
encrypting the initial version of the software product with said first encryption key to generate an encrypted initial software product (Ganesan Fig. 2 No. 220; encrypting the message (software product) with the first key);

generating a first key portion of said first encryption key (Ganesan Fig. 2 No. 202, and col. 2 lines 52-58; d.sub.i);

calculating a second key portion by utilizing said first key portion and said first encryption key to generate a said second key portion such that the combination of said first key portion and second key portion form said first encryption key (Ganesan Fig. 2 No. 202, and col. 2 lines 52-58; $d = d_i * d_j$);

providing said first key portion and said second key portion and said encrypted initial software product for use in a hardware product (Ganesan Col. 2 lines 56-59, and col. 4 lines 47-49; message (software product) is encrypted (message encrypted using authority key that is portions of the key) and provided to the user);

combining said first key portion and said second key portion to provide said first encryption key in said hardware product (Ganesan Col. 2 lines 56-69; $d = d_i * d_j$); and

utilizing said first encryption key to decrypt said encrypted initial software product in said hardware product (Ganesan Col. 2 lines 56-69, col. 6 lines 1-19, and Fig. 2 No. 222; decrypting the message (software product) using the key (the first and the second portion of the key is the first encryption key)).

As per claim 11 a method for providing for the security of encryption keys for encryption and decryption of an initial version of a software product provided by a provider to a user of a hardware product, said method comprising:

providing a first encryption key (Ganesan Fig. 2 No. 202);

encrypting the initial version of the software product with said first encryption key to generate an encrypted initial software product (Ganesan Fig. 2 No. 222);

providing a first key portion (Ganesan Fig. 2 No. 202, and col. 2 lines 52-58; d.sub.i);

utilizing said first key portion and said first encryption key to calculate a second key portion such that the combination of said first and second key portions form said first encryption key (Ganesan Col. 2 lines 56-59, and col. 4 lines 47-49; message (software product) is encrypted (message encrypted using authority key that is portions of the key) and provided to the user);

storing said first key portion in storage means external to the hardware (Ganesan Col. 5 lines 29-34, and Col. 6 lines 21-31; storing the portions of the key on the device (hardware), and portions of the key can be stored separately);

storing said second key portion separately from said first key portion in a tamper proof memory means in the hardware product (Ganesan Col. 5 lines 29-34; storing the portion of the key in a secure area);

storing said encrypted software product in a further memory means in the hardware product (Ganesan Fig. 5 No. 504, and col. 10 lines 49-50; storing the encrypted data on the device (hardware));

combining said first key portion and said second key portion in the hardware product to provide said first encryption key (Ganesan Col. 2 lines 56-69; $d=d_i*d_j$); and

decrypting said encrypted initial software product with said first encryption key (Ganesan Col. 2 lines 56-69, col. 6 lines 1-19, and Fig. 2 No. 222; decrypting the message (software product) using the key (the first and the second portion of the key is the first encryption key)).

As per claim 5, Ganesan teaches the method further enabling an update of said first encryption key to provide a second encryption key to secure a different version of the initial software product, further comprising the steps of:

generating the second encryption key (Ganesan Fig. 2 No. 202; encryption key is generated it is obvious to generate the second encryption key because it would be different from the first encryption key and enhance security);

encrypting the different version of the initial software product with the second encryption key to provide an encrypted different version of the software product (Ganesan Fig. 2 No. 220; the message is encrypted using the encryption key it would be obvious to one ordinary skill in the art at the time of the invention was made to provide an encrypted different version of the software product with the second encryption key because it would be different from the first encryption key and enhance security);

combining the first encryption key and the second encryption key to provide a third key portion (col. 2 lines 57-59);

installing said third key portion and the encrypted different version of the software product in said hardware product (Ganesan Col. 5 lines 29-34, and Col. 6 lines 21-31);

combining said third key portion and said second key portion to generate a fourth key portion in said hardware product (Ganesan Col. 2 lines 56-69; $d = d_i * d_j$);

combining the first key portion and the fourth key portion to provide said second encryption key in said hardware product (Ganesan Col. 2 lines 56-69; $d = d_i * d_j$); and using the second encryption key to decrypt the encrypted different version of the software product (Ganesan Col. 2 lines 56-69, col. 6 lines 1-19, and Fig. 2 No. 222).

As per claim 15, Ganesan teaches the method further enabling security of an update of said first encryption key and providing a second encryption key for encrypting a different version of the initial software product, further comprising:

generating the second encryption key (Ganesan Fig. 2 No. 202; encryption key is generated it is obvious to generate the second encryption key because it would be different from the first encryption key and enhance security);

encrypting the different version of the initial software product with said second encryption key to provide an encrypted different version of the initial software product (Ganesan Fig. 2 No. 220; the message is encrypted using the encryption key it would be obvious to one ordinary skill in the art at the time of the invention was made to provide an encrypted different version of the software product with the second encryption key because it would be different from the first encryption key and enhance security);

combining said first encryption key and said second encryption key to provide a third key portion (col. 2 lines 57-59);

installing said third key portion in said tamper proof memory means (Ganesan Col. 5 lines 29-34; storing the portion of the key in a secure area);

installing said encrypted different version of the initial software product in said further memory means in the hardware product (Ganesan Col. 5 lines 29-34, and Col. 6 lines 21-31);

combining said third key portion and said second key portion to generate a fourth key portion in the hardware product (Ganesan Col. 2 lines 56-69; $d = d_i * d_j$);

combining said first key portion and said fourth key portion to provide said second encryption key in the hardware product (Ganesan Col. 2 lines 56-69; $d = d_i * d_j$); and

using said second encryption key in the hardware product to decrypt the encrypted different version of the initial software product (Ganesan Col. 2 lines 56-69, col. 6 lines 1-19, and Fig. 2 No. 222; decrypting the message (software product) using the key (the first and the second portion of the key is the first encryption key)).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4, 6-8, 12-14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganesan (U.S. Patent Number: 5,557,678) in view of Patel (U.S. Pub. No. 2002/0071558 A1).

As per claims 2, 6, 12, and 16, Ganesan teaches all the subject matter as described above.

Ganesan does not explicitly teach random number generator.

However Patel discloses the method wherein said step of generating a first (second) encryption key utilizes a random number generator to generate said first encryption key (Patel page 5 par. 0050).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teachings of Patel within the system of Ganesan because it would produce portions of the key in using exclusive-or.

As per claim 3, Ganesan and Patel teach all the subject matter as described above. In addition Patel teaches the method wherein said step of calculating a second key portion utilizes an "exclusive or" logic operation to combine said first key portion and said first encryption key to calculate said second key portion (Patel page 3 par. 0022). The rationale for combining are the same as claim 2 above.

As per claim 7, Ganesan and Patel teach all the subject matter as described above. In addition Patel teaches wherein said step of combining the first encryption key and the second encryption key utilizes an "exclusive or" logic operation to combine said first encryption key and said second encryption key to generate said third key portion (Patel page 3 par. 0022). The rationale for combining are the same as claim 2 above.

As per claim 13, Ganesan and Patel teach all the subject matter as described above. In addition Patel teaches wherein said step of utilizing said first key portion and said first encryption key to calculate said second key portion utilizes an "exclusive or" logic operation (Patel page 3 par. 0022). The rationale for combining are the same as claim 2 above.

As per claim 17, Ganesan and Patel teach all the subject matter as described above. In addition Patel teaches wherein said step of combining said first encryption key and said second encryption key to generate a third key portion utilizes an "exclusive or" logic operation (Patel page 3 par. 0022). The rationale for combining are the same as claim 2 above.

As per claim 4, Ganesan and Patel teach all the subject matter as described above. In addition Patel teaches Ganesan teaches the method wherein said step of combining said first key portion and said second key portion utilizes an "exclusive or" logic operation to combine said first key portion and said second key portion to provide said first encryption key (Patel page 3 par. 0022). The rationale for combining are the same as claim 2 above.

As per claim 8, Ganesan and Patel teach all the subject matter as described above. In addition Patel teaches wherein said step of providing said second encryption key utilizes an "exclusive or" logic operation to combine said first key portion and said fourth key portion to provide said second encryption key (Patel page 3 par. 0022). The rationale for combining are the same as claim 2 above.

As per claim 14, Ganesan and Patel teach all the subject matter as described above. In addition Patel teaches wherein said step of combining said first key portion and said second key portion utilizes an "exclusive or" logic operation performed by said hardware product (Patel page 3 par. 0022). The rationale for combining are the same as claim 2 above.

As per claim 18, Ganesan and Patel teach all the subject matter as described above. In addition Patel teaches wherein said step of combining said first key portion and the fourth key portion to provide said second encryption key utilizes an "exclusive or" logic operation (Patel page 3 par. 0022). The rationale for combining are the same as claim 2 above.

Claims 9-10 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganesan (U.S. Patent Number: 5,557,678) in view of Ganesan (Ganesan '276, Patent No. 5,535,276).

As per claims 10 and 20, Ganesan teach all the subject matter as described above.

Ganesan does not explicitly teach non-sequential encryption key.

Ganesan '276 discloses non-sequential encryption key to plurality of users (col. 8 lines 9-19) in using split key ($d = d_i * d_j$) (col. 2 lines 59-62) that reads on the method wherein said second encryption key is non-sequential with said first encryption key.

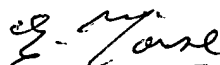
Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to employ the teachings of Ganesan '276 within the system of Ganesan because it would generate different encryption keys that are non sequenced. Therefore it would be obvious to one having ordinary skill in the art at the time of the invention was made to employ the teachings Ganesan '276 within the system of Ganesan because it would generate different encryption keys that are non sequential for different versions of software to enhance security.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eleni A Shiferaw whose telephone number is 571-272-3867. The examiner can normally be reached on Mon-Fri 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eleni Shiferaw
Art Unit 2136
January 6, 2005


EMMANUEL L. MOISE
PRIMARY EXAMINER